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मानक

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“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

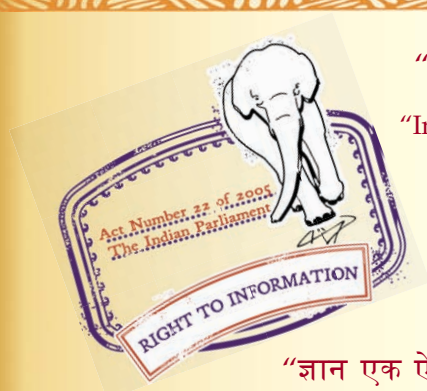
“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS/ISO 16322-3 (2005): Textiles - Determination of
Spirality After Laundering, Part 3: Woven and Knitted
Garmets [TXD 1: Physical Methods of Tests]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक

वस्त्रादि — धुलाई के बाद स्पाइरेलिटी ज्ञात करना

भाग 3 बुने तथा निटेड परिधान

Indian Standard

TEXTILES — DETERMINATION OF SPIRALITY
AFTER LAUNDERING

PART 3 WOVEN AND KNITTED GARMENTS

ICS 59.080.01

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BUREAU OF INDIAN STANDARDS

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NEW DELHI 110002

NATIONAL FOREWORD

This Indian Standard (Part 3) which is identical with ISO 16322-3 : 2005 'Textiles — Determination of spirality after laundering — Part 3: Woven and knitted garments' issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on the recommendation of the Physical Methods of Test Sectional Committee and approval of the Textile Division Council.

Since ISO 16322 has been published in three parts, this standard has also been published in three parts. Other parts in this series are:

Part 1 Percentage of wale spirality change in knitted garments

Part 2 Woven and knitted fabrics

The text of ISO Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

- a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.
- b) Comma (,) has been used as a decimal marker while in Indian Standards the current practice is to use a point (.) as the decimal marker.

In this adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards which are to be substituted in their respective places are listed below along with their degree of equivalence for the editions indicated:

<i>International Standard</i>	<i>Corresponding Indian Standard</i>	<i>Degree of Equivalence</i>
ISO 139 Textiles — Standard atmospheres for conditioning and testing	IS 6359 : 1971 Method for conditioning of textiles	Technically Equivalent
ISO 6330 : 2000 Textiles — Domestic washing and drying procedures for textile testing	IS 15370 : 2005 Textiles — Domestic washing and drying procedures for textile testing	Identical

In reporting the result of a test or analysis made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'.

Indian Standard
**TEXTILES — DETERMINATION OF SPIRALITY
AFTER LAUNDERING**
PART 3 WOVEN AND KNITTED GARMENTS

1 Scope

This part of ISO 16322 specifies procedures to measure the spirality or torque of woven and knitted garments after laundering.

The results obtained from different procedures may not be comparable.

This part of ISO 16322 is not intended to measure the spirality of garments as manufactured, but rather the spirality after laundering.

NOTE Some fabric constructions, such as denim, may have spirality intentionally introduced during manufacturing. Garments made of fabrics from circular knitting machines may have inherent nonverticality of wale alignment.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 139, *Textiles — Standard atmospheres for conditioning and testing*

ISO 6330, *Textiles — Domestic washing and drying procedures for textile testing*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

spirality torque

⟨in garments⟩ rotation, usually lateral, between different panels of a garment resulting from the release of latent stresses during laundering of the woven or knitted fabric forming the garment

NOTE The phenomenon is sometimes referred to as twist, for example, denim jean leg twist.

4 Principle

Test specimens are prepared, marked and laundered according to specified procedures. Spirality is measured in percentage of a marked distance.

5 Apparatus

- 5.1 **Automatic washing machine**, as described in ISO 6330, the type agreed upon between parties.
- 5.2 **Automatic drying machine**, as described in ISO 6330, and agreed upon between parties.
- 5.3 **Calibrated ruler**, at least 500 mm in length, with 1 mm graduated mark.
- 5.4 **Inverted T-square**, at least 500 mm in length.
- 5.5 **Conditioning rack**.

6 Conditioning

Condition the garments in the standard atmosphere for textile testing in accordance with ISO 139, for a minimum of 4 h before marking or measuring them.

7 Test specimen

Select two garments to represent the sample. Mark appropriate distances on the garments.

8 Marking procedures

8.1 Procedure A — Garment, within-panel

8.1.1 Normal procedure

Mark reference line YZ across the width of the garment panel 75 mm above the bottom edge or hem (see Figure 1). If the bottom edge or hem is not straight, draw the reference line YZ perpendicular to the vertical axis of symmetry of the garment.

Place benchmark A midway along line YZ. Place one leg of a right angle device along line YZ so that the second leg is perpendicular upward from benchmark A. Draw a line parallel to line YZ, 500 mm above point A. Mark the intersection of the new line and the point directly above A. This is point B. If the garment panel size is insufficient to mark a 500 mm distance, mark the longest available length which is at least 75 mm below the upper edge of the test garment.

8.1.2 Alternative procedure

If preferred, spirality may be determined using ISO 16322-2 [2], Procedure A.

8.2 Procedure B — Garment, side panel

Lay the test garment flat with seams falling at their natural alignment. Circular knit garments that do not have side seams should be laid flat in the natural vertical alignment as if they had seams.

Mark the bottom edge or hem that intersects with the side seam or natural side edge of the garment. Mark another point up the seam or edge fold, 500 mm above the marked side hem point. This will be distance AB (see Figure 3). If the garment panel size is insufficient to mark a 500 mm distance, use the longest available length.

If the test specimens exhibit spirality prior to laundering, include those results in the report.

9 Laundering

9.1 Select laundering conditions according to ISO 6330 that correspond to those which the garment will be exposed.

9.2 Perform the selected number of laundering cycles.

9.3 After the final laundering cycle, condition garments in the standard atmosphere for testing textiles according to ISO 139.

10 Assessment

10.1 General

Specimens should be placed flat on a smooth surface in their natural orientation.

10.2 Assessment by procedure

10.2.1 Procedure A — Garment, within-panel

Place the horizontal leg of a right angle device along line YZ and the second leg on a perpendicular downward from point B. Mark the point where the angle device intersects with line YZ. This is point A' (see Figure 2).

Measure and record A'B and AA'.

Calculate the percentage spirality of each garment (X) as follows:

$$X = 100 \left(\frac{AA'}{A'B} \right)$$

Calculate and report the mean percentage spirality in the garments tested.

10.2.2 Procedure B — Garment, side panel

The side seam or edge fold at the bottom hemmed edge is marked. This is point A'.

Measure and record line AB and AA' (see Figure 4).

Calculate the percentage spirality (X) of each garment as follows:

$$X = 100 \left(\frac{AA'}{AB} \right)$$

Calculate and report the mean percentage spirality in the garments tested.

11 Test report

The test report shall contain the following:

- a) reference to this part of ISO 16322, i.e. ISO 16322-3:2005;
- b) details of garment tested;
- c) mean percentage spirality of garments prior to laundering, if any;
- d) mean percentage spirality of the garments tested after laundering;
- e) marking procedure used;
- f) laundering procedure and type washer used;
- g) number of laundering cycles used.

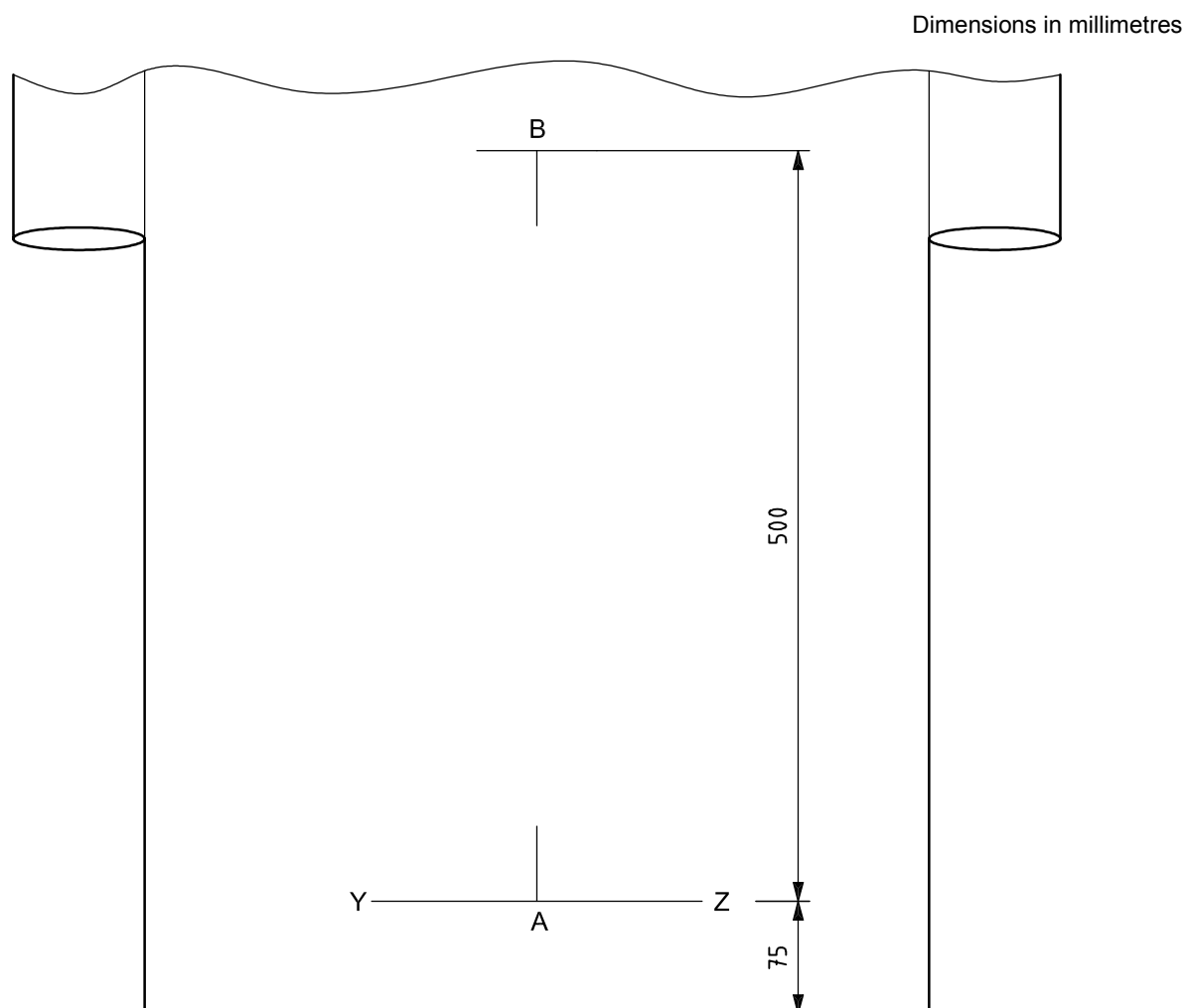
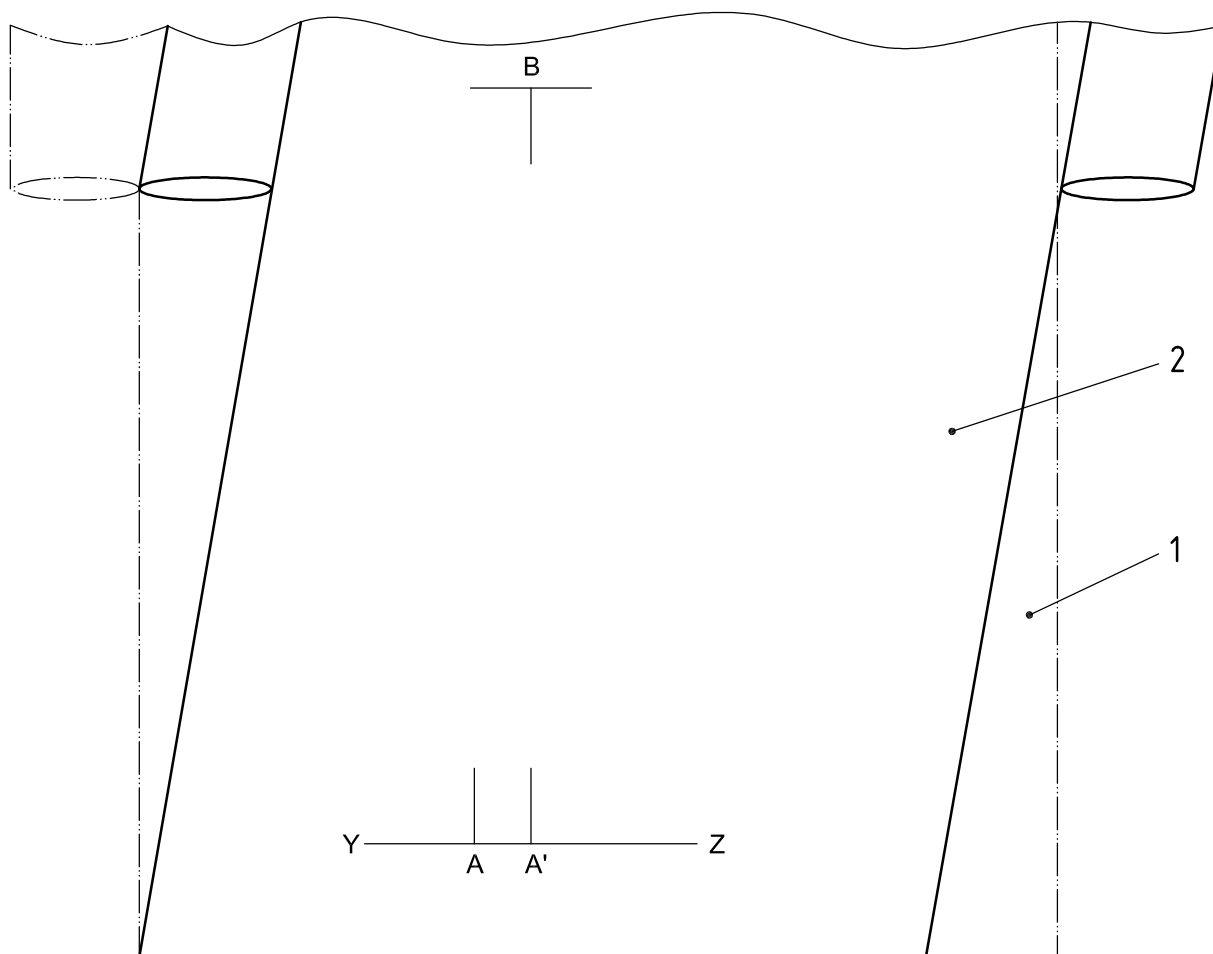


Figure 1 — Within-garment panel — Marks before laundering

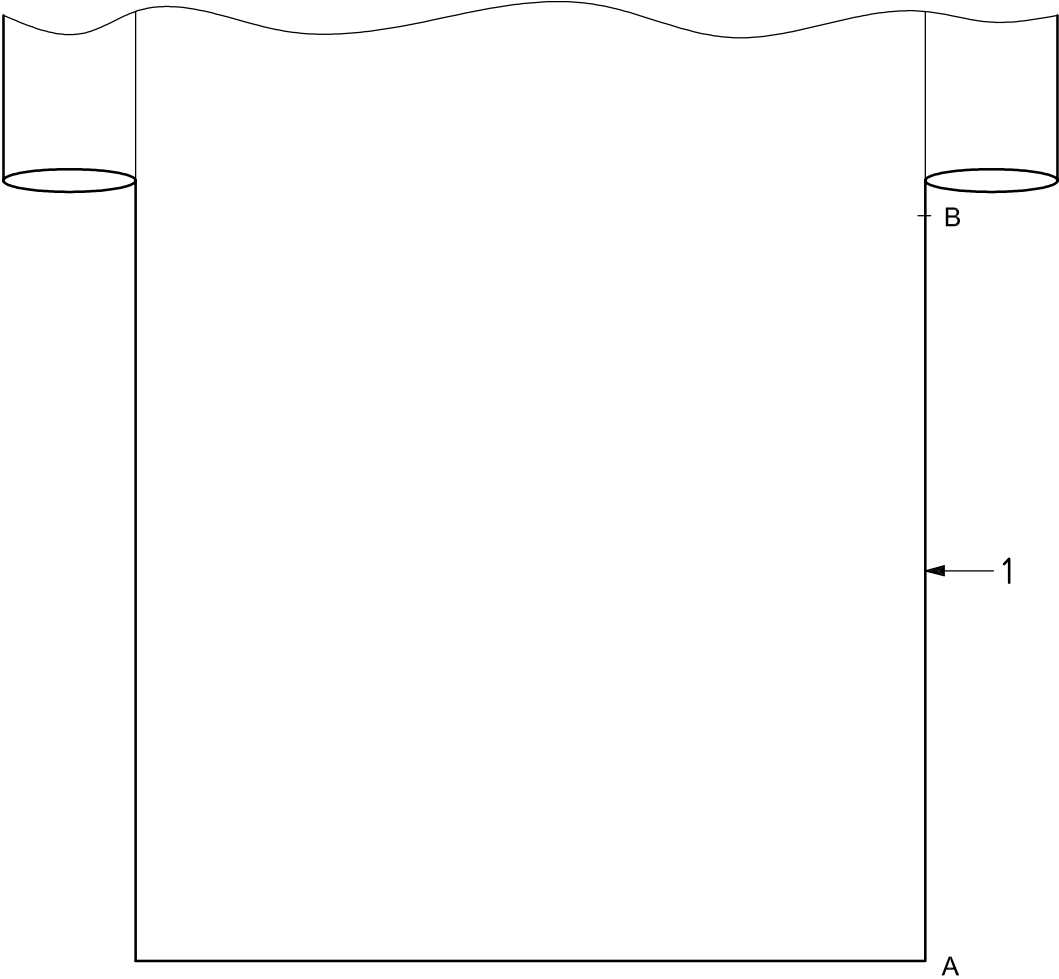


Key

- 1 original garment before laundering
- 2 garment after laundering

NOTE The spirality direction in the figure is for illustration only. Spirality can be in either direction.

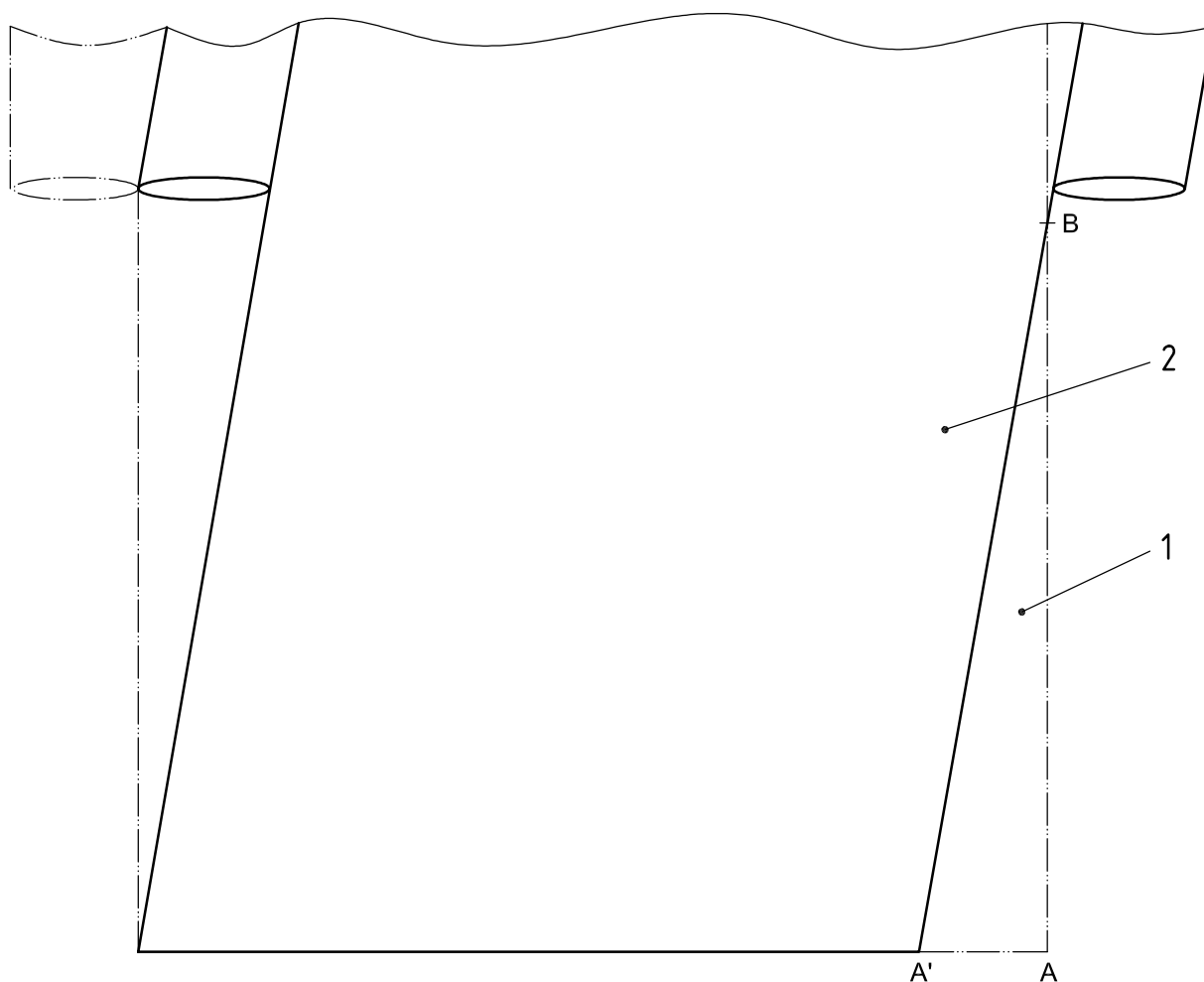
Figure 2 — Within-garment panel — Marks after laundering



Key

- 1 side seam (edge fold)

Figure 3 — Side seam (edge fold) — Garment marks before laundering



Key

- 1 original side seam (edge fold)
- 2 after laundering seam (edge fold)

NOTE The spirality direction in the figure is for illustration only. Spirality can be in either direction.

Figure 4 — Side seam (edge fold) — Garment marks after laundering

Bibliography

- [1] AATCC Test Method 179 — *Skewness Change in Fabric and Garment Twist Resulting from Automatic Home Laundering*
- [2] ISO 16322-2, *Textiles — Determination of spirality after laundering — Part 2: Woven and knitted fabrics*

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Amendments Issued Since Publication

Amendment No.	Date of Issue	Text Affected

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